CLAIMS

1. Apparatus for constructing a thin film mirror, which apparatus comprises a suction chamber, first attachment means positioned at a first side of the suction chamber and for attaching the thin film to the first side of the suction chamber, and second attachment means positioned at a second and opposite side of the suction chamber and for attaching the thin film to the second side of the suction chamber, the first and second attachment means being such that they secure the thin film against movement when tension is applied in a first direction extending between the first and second attachment means, and the first and second attachment means being such that they allow the thin film to move and stretch in a second direction which is at right angles to the first direction and which allows the thin film to be distorted to a desired geometric shape for forming the thin mirror.

2. Apparatus according to claim 1 and including first adjustment means positioned at a third side of the suction chamber, and second adjustment means positioned at a fourth and opposite side of the suction chamber, the first and second adjustment means being for stretching the thin film in the second direction.

3. Apparatus according to claim 2 in which the first adjustment means comprises a clamping device for clamping the thin film, and tensioner means for

applying a tension to the thin film in order to stretch the thin film in the second direction.

4. Apparatus according to claim 2 in which the second adjustment means comprises a clamping device for clamping the thin film, and tensioner means for applying a tension to the thin film in order to stretch the thin film in the second direction.

5. Apparatus according to claim 1 in which the first side of the suction chamber is an upper side, in which the second side of the suction chamber is a lower side, in which the first direction in which the tension is applied is then a vertical direction, and in which the second direction in which the tension is applied is then a horizontal direction.

6. Apparatus according to claim 1 in which the first attachment means comprises a flexible retaining strip, and an attachment member which has first and second ends, the first end being such that it passes partially around the flexible retaining strip, and the second end being such that it is secured to the suction chamber.

7. Apparatus according to claim 6 in which the flexible retaining strip is of a circular cross section, and in which the first end of the attachment member is concave and the second end of the attachment member is straight.

8. Apparatus according to claim 6 in which the first attachment means also comprises adhesive means which secures the thin film around the flexible retaining strip and to itself.

9. Apparatus according to claim 1 in which the second attachment means comprises a flexible retaining strip, and an attachment member which has first and second ends, the first end being such that it passes partially around the flexible retaining strip, and the second end being such that it is secured to the suction chamber.

10. Apparatus according to claim 9 in which the flexible retaining strip of the second attachment means is of a circular cross section, and in which the first end of the attachment member of the second attachment means is concave, and the second end of the attachment member is straight.

11. Apparatus according to claim 9 in which the second attachment means also comprises adhesive means which secures the thin film around the flexible retaining strip and to itself.